Patent No. 5,368,392 (the "'392 Patent"). The Examiner further rejected claims 1-3 under the judicially created doctrine of obviousness-type double patenting.

The Examiner will appreciate that the subject application is a continuation-in-part application from the application that matured into the '392 Patent. In accordance with the suggestion offered by the Examiner, Applicants are submitting herewith a terminal disclaimer that should overcome this rejection. Accordingly, Applicants submit that the Examiner's rejection of these claims on this ground should be withdrawn.

The Examiner has further rejected claims 1-3 as being obvious within the meaning of 35 U.S.C. §103 over Everest in view of Darringer et al. stating:

> Everest discloses an apparatus for identifying an energy zone on a surface whose temperature is to be measured wherein a sighting device, integrally formed with a radiometer as shown in Fig. 2, uses a visible light source to identify the energy zone including the periphery thereof. Everest discloses all the subject matter claimed by applicant with the exception of the sighting device using a laser as the visible light source and the limitation stated in claim 2.
>
> Darringer et al. discloses a sighting device for an infrared detector wherein a laser is used as the source of visible light. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a laser as taught by Darringer et al. as the visible source or light used by Everest since both are alternative types of sources of visible light which will provide the same function of providing a beam of visible light and since Everest has already suggested that any source of visible light may be used since the two sources of visible light identified by Everest are considered only examples of types of sources of visible light that may be used.

It should be appreciated that the present invention as defined by claim 1, amended, requires:

> A laser sighting device for outlining an energy zone to be measured by a radiometer when measuring the temperature of a surface, said device including:
>
> means adapted to project at least one laser beam toward said surface; and
>
> means for causing said at least one laser beam to outline said energy zone.

The advantage offered by the invention of claim 1, amended, is that it provides a laser sighting device that relies on the use of at least one laser beam that is able to outline the energy zone on the surface to be measured rather than illuminate the entire zone. The clear advantage offered by such a device is that it only directs energy at the edge of the energy zone to be measured to outline same and, as such, has virtually no effect on the temperature measurement to be taken. Such a concept is neither taught nor suggested in either Everest or Darringer et al., taken alone or in combination.

Everest teaches the use of a visible light source 68 such as an incandescent lamp or strobe light which is projected against the surface, the temperature of which is to be measured. The geometry of the light beam in Everest is congruent with the energy zone and the visible light source is projected through the same lens system used by the IR detector. The Everest device which uses a visible light source, adds additional energy to the same energy zone where the temperature measurement is to be taken which thus brings the accuracy of the resultant temperature measurement into question. This is particularly true for temperature measurements which are being taken at close range.

When Everest uses a beam splitter, the incandescent light beam causes the beam splitter to act as a radiator of infrared energy. Similarly, when it uses a Fresnel lens, the light tends to elevate the temperature of the Fresnel lens which, in turn, would reflect back to the IR detector. In either event, energy is added to the surface which may affect the accuracy of any temperature measurement.

In view of the above, Applicants submit that claim 1, amended, patentably distinguishes over the Everest reference which lacks any teaching of "means adapted to

project at least one laser beam toward said surface" or "means for causing said at least one laser beam to outline said energy zone" as required in claim 1, amended.

Darringer et al. is directed to a targeted infrared thermometer in which a laser is provided to identify the focal point, i.e., the center, of the energy zone. There is no teaching or suggestion in Darringer et al. of providing "means for causing said at least one laser beam to outline said energy zone" as required in claim 1, amended.

Applicants further submit that even if these references were combined in the manner suggested by the Examiner, their combination would still fail to anticipate or otherwise render obvious the combination of claim 1, amended. Specifically, even if these references were combined in the manner suggested by the Examiner, Applicants submit that such combination would still fail to provide for a device which includes "means for causing said at least one laser beam to outline said energy zone" as required in claim 1, amended.

The premise of the Examiner's rejection (and of the later rejection based on the JP 62-12848 patent ("JP") is that it would be obvious to simply substitute a laser for a light source produced from the types of incandescent lamps taught in both JP and Everest. In the present context, such a substitution is impermissible. It must be appreciated that the beam produced by an incandescent lamp is incoherent in nature. When such a incoherent beam is projected parallel and in close proximity to the outside boundaries of the invisible IR cone, a portion of the incoherent beam would diffuse towards the inside of the energy cone. The diffused portion of light inside the cone will hit the target energy zone in the form of heat energy and will be reflected back to the IR detector giving an erroneous temperature reading.

If one attempts to use such an incoherent beam and wants to eliminate this problem, the light beam must be projected well away from the energy zone's boundaries. In eliminating this problem, another one is created. The projected beam being well away from the boundaries of the IR energy zone will no longer be able to closely define the target zone. The intended purpose of the visible light beams for identifying the target zone will be lost.

In direct contrast, a laser produces a coherent beam whereas an incandescent lamp produces incoherent light. Since the laser can project a well defined beam of light, it may be used to define an IR heat zone accurately without infusing energy into the IR cone.

As such, Applicants submit that the Examiner's rejection of claim 1, amended under the combination of Everest in view of Darringer et al. should be withdrawn.

Claims 2-3 depend from and further restrict claim 1, amended. Applicants submit that these claims also patentably distinguish over Everest in view of Darringer et al. for the same reasons as claim 1, amended.

The Examiner has further rejected claims 1-3, 9, 10 and 15 as being obvious within the meaning of 35 U.S.C. §103 over JP 62-12848 in view of Darringer et al. In support of this rejection, the Examiner stated:

> JP discloses an apparatus for identifying an energy zone on a surface whose temperature is to be measured wherein a sighting device uses a plurality of visible light sources 4, two of which are shown positioned approximately 180 degrees apart in Fig. 1 and 2, to identify the energy zone including the periphery thereof. JP discloses all the subject matter claimed by applicant with the exception of the sighting device using a laser as the visible light source and the limitation stated in claims 2 and 3.
>
> Darringer et al. discloses a sighting device for an infrared detector wherein a laser is used as the source of visible light. Therefore, it would have been obvious to a person having ordinary skill in the ar at the time the invention was

made to use a laser as taught by Darringer et al. as the visible source of light used by JP since both are alternative types of sources of visible light which will provide the same function of providing a beam of visible light.

With respect to claims 2 and 3, JP's sighting device is used in conjunction with a radiometer 1. JP does not indicate the structural relationship between the radiometer and the sighting device. However, how the sighting device is attached to the radiometer, i.e., removably mounted or integrally formed, absent any criticality, is only considered to be a choice of engineering skill or design since neither non-obvious nor unexpected results will be obtained as long as the sighting device is used in conjunction with the radiometer to visible outline the energy zone to be measured. Furthermore, with respect to claim 3, the term "integrally" is sufficiently broad to embrace constructions united by such means as fastening and welding. See *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973).

It should be appreciated that JP, which is directed to a confirmation method of radiation of irradiated area, does not define the type of light source used for producing the light beam except by calling it a small lamp. As properly noted by the Examiner, there is no reference or suggestion that it is, in fact, a laser. Thus for the reasons discussed above relative to the Everest reference, JP lacks any teaching or suggestion of providing "means adapted to project at least one laser beam toward said surface" or "means for causing said at least one laser beam to outline said energy zone" both as required by claim 1, amended.

As discussed above, Darringer et al. fails to teach or suggest any "means for causing said at least one laser beam to outline said energy zone" as required in claim 1, amended. Thus, even if these references were combined in the manner suggested by the Examiner, they would still fail to anticipate or render obvious the subject matter of claim 1, amended as such combination would still fail to provide "means for causing said at least one laser beam to outline said energy zone" as required by claim 1, amended.

Accordingly, and in view of the above, the simple substitution of a laser beam for

an incandescent light source is not, as maintained by the Examiner, an obvious substitution but offers far superior results.

Claims 2-3, 9-10 and 15 either depend from and further restrict claim 1, amended or are of lesser breadth. Applicants submit that these claims distinguish over the JP and Darringer et al. references, taken alone or in combination for the same reasons as claim 1, amended.

Applicants appreciate the comments by the Examiner that claims 4-8 and 11-14 would be allowable if re-written in the manner suggested by the Examiner.

In view of the foregoing, Applicants submit that all claims are in condition for immediate allowance. Reconsideration and an early Notice of Allowance are therefore requested.

Respectfully submitted,

Gregory J. Battersby
Reg. No. 26,703
Attorney for Applicant
(203) 324-2828